

November 2014 Regional Climate Summary For the San Francisco Bay Area and Monterey Bay Area

Like most of 2014, November 2014 was a warm month. Average monthly temperatures were from 2 to 4 degrees F above normal at most climate stations. Several locations had one of their warmest Novembers on record. Rainfall was scarce during the first half of November, but became more plentiful during the second half. Monthly rain totals were mostly below normal, but some climate stations near Monterey Bay ended the month with above normal rainfall.

November Temperatures:

There were two warm events during November. The first occurred from the 5th through 9th, and resulted in two daily high temperature records (both at the Oakland Museum). The second warm event occurred during the week of Thanksgiving, with temperatures peaking on Wednesday November 26. Two record highs were set on the 26th (in Oakland and Salinas). The warmth continued into Thanksgiving Day when the high temperature at Pinnacles National Park was a balmy 85 degrees. By Friday, November 28 much cooler air had settled into the valleys, but the airmass aloft remained warm. Morning lows on the 28th varied considerably by elevation, ranging from chilly upper 20s in the valleys of Santa Cruz County to the mid 60s at the higher elevations of Monterey and San Benito counties.

The two November warm spells, along with continued warmer than normal sea surface temperatures along the coast, helped push average temperatures for the month above normal at all climate stations. Several locations experienced one of their warmest Novembers on record and the Oakland Museum posted its warmest average November temperature since temperature records began there in 1970.

Location	Nov. 2014 Avg. Temp	Nov. 2014 Rank	Years of Records
Oakland Museum	60.7 deg F	Warmest	42 years
Salinas Airport	60.7	4 th warmest	82 years
Newark	58.9	5 th warmest	72 years
Watsonville	58.5	4 th warmest	101 years
King City	58.3	4 th warmest	82 years
Redwood City	57.3	5 th warmest	83 years
Antioch	57.5	4 th warmest	60 years
Saint Helena	57.1	4 th warmest	106 years
Kentfield	56.9	8 th warmest	112 years
Petaluma	56.9	8 th warmest	100 years
Napa	56.9	10 th warmest	106 years
San Francisco	59.8	14 th warmest	141 years

November Regional Temperature Summary

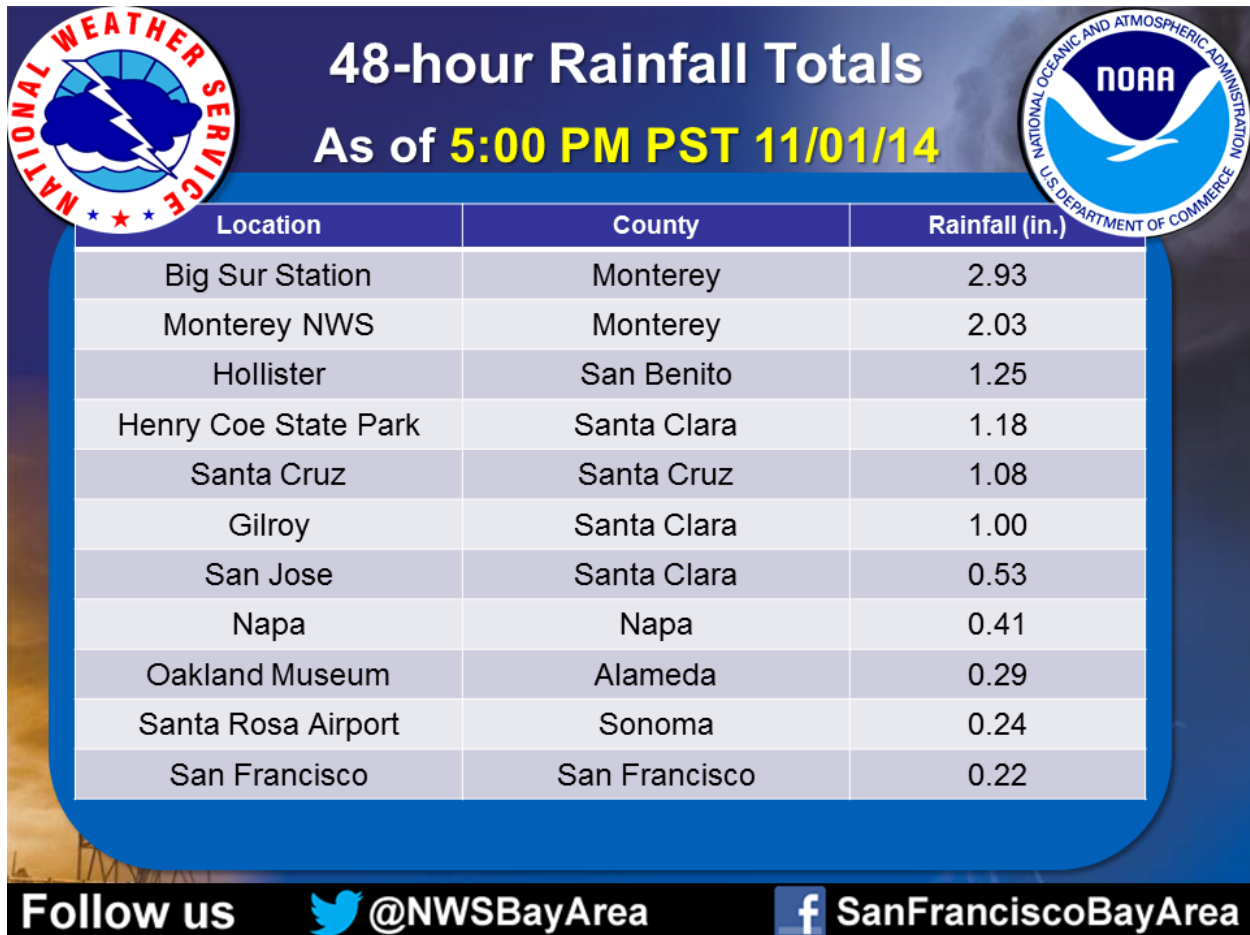
Location	Average High	Normal High	Departure from Normal	Average Low	Normal Low	Departure from Normal
North Bay						
Angwin	61.9	59.5	2.4	45.3	42.8	2.5
Calistoga	66.8	66.4	0.4	M	40.4	M
Cloverdale	70.5	65.2	5.3	45.3	43.5	1.8
Kentfield	65.6	62.3	3.3	48.1	45.3	2.8
Napa	68.0	65.1	2.9	45.8	43.7	2.1
Napa Airport	66.6	63.7	2.9	41.8	38.8	3.0
Petaluma Airport	68.0	65.1	2.9	45.7	42.2	3.5
Saint Helena	68.2	65.1	3.1	46.0	42.7	3.3
San Rafael	66.9	62.4	4.5	49.0	45.9	3.1
Sonoma County Airport	67.9	64.3	3.6	43.4	40.4	3.0
Sonoma	68.1	64.8	3.3	43.6	41.7	1.9
San Francisco Peninsula						
Half Moon Bay	65.2	62.4	2.8	47.7	43.7	4.0
Palo Alto	65.9	64.8	1.1	45.0	42.4	2.6
Redwood City	67.3	64.5	2.8	47.2	44.3	2.9
San Francisco Airport	66.6	62.9	3.7	52.7	48.7	4.0
San Francisco Downtown	65.6	63.1	2.5	54.0	50.1	3.9
Woodside	72.0	67.3	4.7	43.7	40.4	3.3
East Bay						
Antioch	66.5	63.8	2.7	48.5	45.1	3.4
Berkeley	67.4	64.8	2.6	50.2	46.6	3.6
Concord	67.8	65.2	2.6	49.2	45.8	3.4
Concord Airport	67.9	64.1	3.8	47.1	43.9	3.2
Fremont	67.1	64.4	2.7	48.8	46.1	2.7
Hayward Airport	65.8	63.6	2.2	48.5	47.4	1.1
Livermore	67.4	64.4	3.0	45.4	43.4	2.0
Livermore Airport	69.5	64.6	4.9	46.7	42.5	4.2
Martinez	66.4	63.9	2.5	M	40.0	M
Mount Diablo Junction	62.7	61.8	0.9	48.7	44.5	4.2
Newark	66.8	64.4	2.4	51.0	47.5	3.5
Oakland	69.4	64.6	4.8	52.0	49.1	2.9
Oakland Airport	65.5	63.1	2.4	48.1	45.4	2.7
Richmond	66.4	64.3	2.1	50.8	47.9	2.9

South Bay and Santa Cruz County	Average High	Normal High	Departure from Normal	Average Low	Normal Low	Departure from Normal
Gilroy	71.3	67.8	3.5	45.0	42.1	2.9
Los Gatos	66.9	63.9	3.0	45.3	42.7	2.6
Moffett Federal Airfield	67.9	65.1	2.8	48.8	47.3	1.5
Mount Hamilton	57.3	53.3	4.0	47.2	42.5	4.7
San Jose	67.0	64.3	2.7	46.9	46.0	0.9
Santa Cruz	66.7	66.8	-0.1	46.9	44.9	2.0
Watsonville	69.8	66.5	3.3	47.1	43.0	4.1
Watsonville Airport	69.7	66.0	3.7	48.9	43.3	5.6
Monterey and San Benito Counties						
Big Sur Station	69.4	64.5	4.9	49.3	44.9	4.4
Carmel Valley	70.7	68.0	2.7	45.4	42.7	2.7
Hollister	68.2	67.1	1.1	45.9	41.7	4.2
King City	72.0	69.7	2.3	44.5	40.5	4.0
Monterey	66.5	62.8	3.7	49.7	47.1	2.6
Monterey Airport	66.5	63.7	2.8	48.9	45.8	3.1
Salinas	69.9	67.5	2.4	46.7	42.9	3.8
Salinas Airport	71.1	66.7	4.4	50.3	44.6	5.7

Daily Temperature Records for November 2013			
Date	Location	Record Max Temp	Previous Record and Year
11/08	Oakland Museum	83	79 in 1978
11/09	Oakland Museum	76	76 in 2001
11/26	Oakland Museum	72	72 in 2002
11/26	Salinas Airport	82	82 in 1947

November Precipitation:

A storm system that produced widespread rainfall across the region on Halloween continued to generate scattered showers into Saturday, November 1.



Graphic showing rainfall 48 hour rainfall totals as of 5 pm on November 1st. Note: the bulk of this precipitation fell on Halloween, especially in more northern areas.

A weak weather system generated light amounts of rainfall from late on the evening November 12 through the morning of 13th. Rain totals at lower elevations mostly ranged from a tenth to a third of an inch. Santa Cruz picked up the most rainfall on the 13th with a total of 0.53".

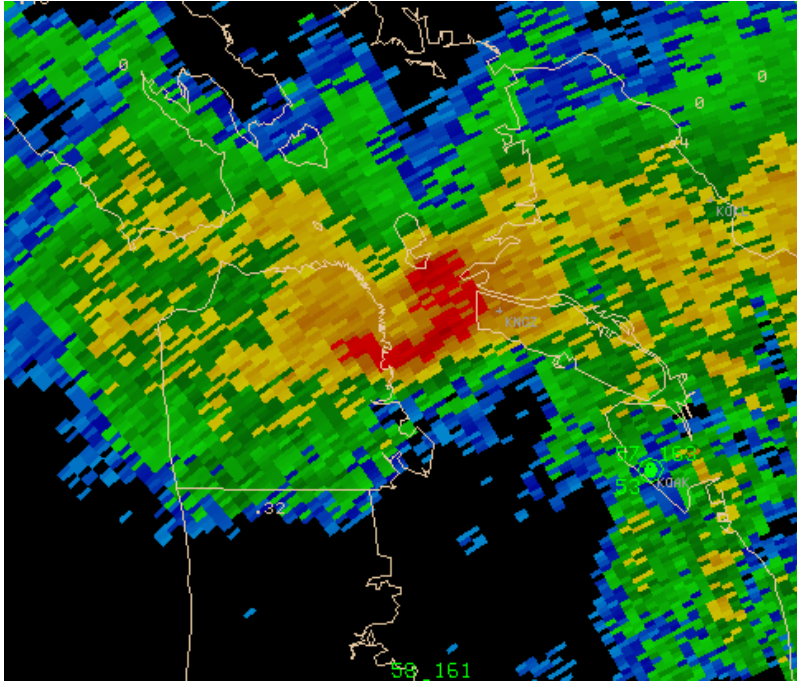
Mid-level clouds moving through the area on Sunday, November 16 produced no rainfall, but did result in a stunning sunrise.



Sunrise in Tiburon on Sunday, November 16. Photo credit: William Clements



A series of weather systems moved through the region from November 19 through 22. These weather systems generally produced light to moderate amounts of precipitation, but some isolated intense showers and thunderstorms occurred during the late afternoon and early evening hours of Thursday, November 20. The bulk of these showers and thunderstorms occurred over the coastal waters between the Golden Gate and Monterey Bay, and locally inland across southern San Mateo County. Radar showed rotation in some of the more intense showers off the southern San Mateo County coast, prompting issuance of Special Marine Warnings. Rain rates were locally heavy in these showers and isolated thunderstorms. Nearly three quarters of an inch of rain fell in two hours during the late afternoon near La Honda in southern San Mateo County. An isolated heavy shower also developed over Northern San Francisco Bay early that evening; tracking across the Bay Bridge and Yerba Buena Island at about 7 pm. Mike Mibach of KTVU posted a video of water covering the roadway in the Yerba Buena tunnel section of the Bay Bridge. The video can be found here:

<https://vine.co/v/OJDv2gdFY1D>



Radar image of intense shower over San Francisco Bay at 7:15 pm on Thursday, November 20, just after the shower had dropped heavy rain on the Bay Bridge and Yreba Buena Island.

Rain totals from November 19-22 ranged from less than a tenth of an inch in the interior valleys of Monterey and San Benito counties to as much as 3 inches in the North Bay.

<div>  <div> <h2>Four Days Rainfall Totals</h2> <h3>As of 4:00 PM PST 11/22/14</h3> </div>  </div>		
Location	County	Rainfall (in.)
Santa Rosa Airport	Sonoma	0.77
Kentfield	Marin	3.11
San Rafael	Marin	1.40
Downtown San Francisco	San Francisco	1.06
Downtown Oakland	Alameda	1.54
Hayward	Alameda	0.40
Concord	Contra Costa	0.61
San Jose Int'l Airport	Santa Clara	0.14
Santa Cruz	Santa Cruz	1.45
Monterey	Monterey	0.39
Hollister Airport	San Benito	0.11

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Four-day rain totals (Nov 19-22) for select locations.



Showers over San Francisco Bay on November 20 as viewed from Grizzle Peak in the Berkeley Hills. Photo credit: Michael Macor, San Francisco Chronicle



Double rainbow after a passing shower on November 20th. Photo taken from the roof of the National Weather Service office in Monterey by Charles Bell.

One final storm system brought rain to the region at the end of the month. Rain began in the North Bay by the late afternoon hours of Friday, November 28. As rain began to fall in the North Bay, very dry air was still in place across southern portions of the forecast area. During the late afternoon hours of November 28, rain was falling in Sonoma County while relative humidity values were only in the single digits in the interior of Monterey County.

Rain spread across the remainder of the region on Saturday November 29. Rainfall was heaviest in the South Bay on the morning of the 29th. In a departure from the norm, San Jose accumulated more rain on the 29th (0.70") than any other Bay Area city, even more than normally wet spots like Kentfield (0.55").

Showers continued into Sunday November 30 and there were isolated thunderstorms over the coastal waters. Once again, San Jose was wetter than many surrounding areas and for the second consecutive day San Jose picked up more rain than San Francisco.

Three-day rain totals across the San Francisco Bay Area and Santa Cruz County from late on November 28 through November 30 ranged from 0.25-1.25" at lower elevations and from 1.5-3.5" in the hills (highest totals in the Santa Cruz Mountains). Rain totals were significantly lower across Monterey and San Benito Counties, ranging from 0.10-0.50" in most areas, except locally up to 0.80" in the Big Sur area.

Rain totals for the entire month were below normal at a large majority of climate stations, generally ranging from 50 to 90 percent of normal. Some locations on the San Francisco Peninsula fared the worst, coming in at only slightly more than 40 percent of normal. Climate stations near Monterey Bay generally had a more productive month for rainfall with some locations accumulating totals greater than normal.

November Regional Precipitation Summary

Location	November Rainfall	Normal Nov Rain	Percent of Normal
North Bay			
Angwin	3.91	5.16	76
Cloverdale	5.19	5.54	94
Kentfield	4.53	6.46	70
Muir Woods	5.44	5.07	107
Napa	2.42	3.45	70
Napa Airport	1.50	2.56	59
Occidental	5.19	7.34	71
Petaluma Airport	3.25	3.29	99
Saint Helena	2.48	4.49	55
San Rafael	2.45	4.31	57
Sonoma County Airport	3.20	4.69	68
Sonoma	2.63	3.86	68

San Francisco Peninsula	November Rainfall	Normal Nov Rain	Percent of Normal
Half Moon Bay	1.74	3.32	52
Palo Alto	0.82	1.96	42
Redwood City	1.00	2.37	42
San Francisco Airport	1.99	2.38	84
San Francisco Downtown	2.29	3.16	72
Woodside	2.23	3.70	60
East Bay			
Antioch	1.15	1.60	72
Berkeley	2.38	3.30	72
Concord	1.11	2.22	50
Concord Airport	1.01	1.54	66
Fremont	1.36	1.85	74
Hayward Airport	1.29	2.17	59
Livermore	1.19	1.84	65
Livermore Airport	1.31	1.98	66
Martinez	1.42	2.59	55
Mount Diablo Junction	1.71	3.11	55
Newark	1.24	1.70	73
Oakland	2.67	2.89	92
Oakland Airport	1.79	2.45	73
Richmond	2.43	3.24	75
South Bay and Santa Cruz County			
Ben Lomond	5.39	6.09	89
Gilroy	2.06	2.28	90
Los Gatos	1.99	2.37	84
Moffett Federal Airfield	1.20	1.64	73
Mount Hamilton	3.12	3.57	87
San Jose	1.57	1.68	93
Santa Cruz	3.83	3.75	102
Watsonville	3.32	2.74	121
Watsonville Airport	2.53	2.10	120
Monterey and San Benito Counties			
Big Sur Station	4.48	4.83	93
Carmel Valley	1.35	2.35	57
Hollister	1.44	1.68	86
King City	1.34	1.11	121
Monterey	1.42	2.32	61
Monterey Airport	1.33	1.88	71
Pinnacles National Park	1.69	1.54	110
Salinas	2.33	1.76	132
Salinas Airport	0.84	1.40	60

Monthly Ranks for Downtown San Francisco		
Average High Temperature	65.6 degrees	29 th warmest out of 141 years
Average Low Temperature	54.0 degrees	5 th warmest out of 141 years
Average Temperature	59.8 degrees	14 th warmest out of 141 years
Precipitation	2.29 inches	77 th wettest out of 165 years

Monthly Extremes for Select Locations			
Location	Max Temp: Warmest Day(s)	Min Temp: Coolest Day(s)	Precipitation: Wettest Day(s)
Sonoma County Airport	11/08	11/17	11/30
	83 degrees	34 degrees	0.62 inches
San Francisco	11/08	11/28	11/30
	76 degrees	49 degrees	0.77
Livermore Airport	11/09	11/28	11/30
	82 degrees	36 degrees	0.44
San Jose	11/05	11/24	11/29
	77 degrees	38 degrees	0.71
Salinas Airport	11/05, 11/08	11/24, 11/28	11/01
	83 degrees	41 degrees	0.43 inches

Fog:

Dense fog affected portions of the region on a number of November days, most notably on:

November 7 (morning): Around San Francisco Bay

November 7 (evening): Near Monterey Bay

November 8 (morning): Around San Francisco Bay

November 10 (morning): Around San Francisco Bay

November 14 (morning): Around Monterey Bay and North Bay Valleys

November 15 (morning): North Bay Valleys



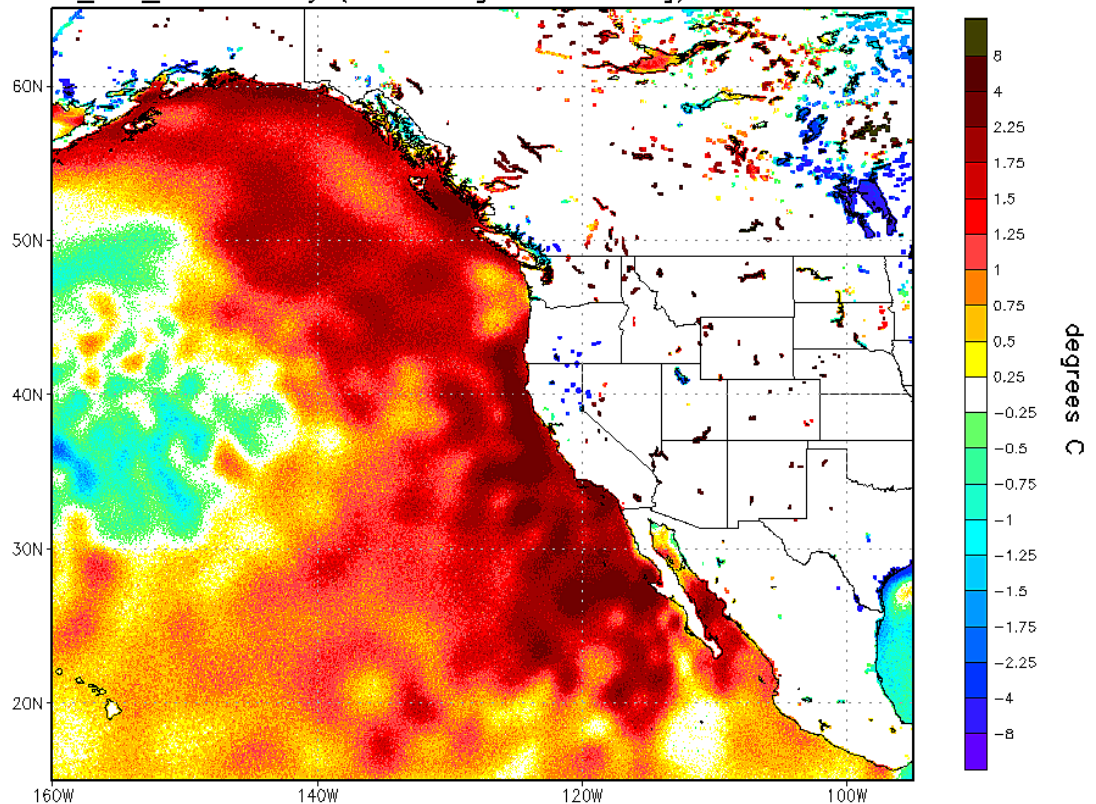
Football game in the fog at Monte Vista Christian School near Watsonville on the evening of November 7. Photo: Dann Cianca

Continued Warm Coastal Waters:

Ocean water temperatures along the northern and central California coast warmed above normal by mid-summer and remained warmer-than-normal well into autumn. On November 11, the sea surface temperature at the Monterey Bay buoy dropped below 60 degrees F for the first time since July 16th, and then remained above 57 degrees F for the rest of November. For perspective, the average November water temperature at the Monterey Bay buoy is 56 deg F.

NOAA/NWS/NCEP/EMC Marine Modeling and Analysis Branch Oper H.R.

RTG_SST_HR Anomaly (0.083 deg X 0.083 deg) for 22 Nov 2014



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Map showing sea surface temperature anomalies (deg C) over the eastern Pacific in late November 2014.

In early November the *San Jose Mercury News* ran a story about the unusually warm ocean waters off our coast which can be found here:

http://www.mercurynews.com/science/ci_26851300/unusual-warm-ocean-conditions-off-california-west-coast